

CLAIMS:

1. An integrated CFL lamp which comprises the combination of (1) means to reduce the amount of leachable mercury in the spent lamp; and (2) means to reduce the amount of leachable lead in the spent lamp, said lamp, when subjected to TCLP standard tests in which a leachate is analyzed for mercury and lead content, containing no more than 0.2 ppm mercury and no more than 5 ppm lead mercury in the test leachate.

2. An integrated CFL lamp as claimed in claim 1, wherein said means to reduce the leachable lead is a circuit board that comprises a lead-free solder or such circuit board that comprises a lead-free solder in combination with at least one of a base portion and/or a lamp screw base portion that comprises a lead-free solder.

3. An integrated CFL lamp as claimed in claim 2, wherein said means to reduce the leachable

mercury is a burner dosed with either elemental mercury or an amalgam, at an initial level relative to the volume of the discharge space of between about 0.02 and about 0.2 mg/cm³ or a burner dosed with mercury and containing additives to reduce the amount of leachable mercury in the spent lamp.

4. A lighting unit which comprises:

at least one low-pressure mercury discharge lamp having at least one light-transmitting discharge vessel which is provided with a luminescent layer on an inner surface and which encloses a discharge space provided with a gas fill energizable to a discharge state and mercury in amounts effective to render the lamp TCLP compliant as to mercury;

a housing base on which said lamp is mounted, having a base portion connected to a cap portion;

a ballast circuit arrangement disposed within the housing located at least partially on a circuit board and effective to energize said gas fill to such discharge state; and

means to reduce the amount of leachable lead and the amount of leachable mercury in the spent lamp to an amount sufficient to render the lamp TCLP-compliant as to both mercury and lead.

5. A lighting unit as claimed in claim 4, wherein said base is formed in a way suitable for mechanical and electrical connection to a lamp socket.

6. A lighting unit as claimed in claim 5, wherein the means by which the amount of leachable lead in the lamp is reduced is the use of a lead-free solder at least in the construction of the printed circuit board.
7. A lighting unit as claimed in claim 5, wherein the means by which the amount of leachable lead in the lamp is reduced is the use of a lead-free solder in the construction of (a) the circuit board or (b) the circuit board and a base portion of the lamp.
8. A lighting unit as claimed in claim 5, comprising an initial mercury dose selected to be between an upper limit of about 0.2 mg/cm^3 of the volume enclosed by the discharge vessel and a lower limit of about 0.02 mg/cm^3 .
9. A lighting unit as claimed in claim 6, comprising an initial mercury dose selected to be between an upper limit of about 0.2 mg/cm^3 of the volume enclosed by the discharge vessel and a lower limit of about 0.02 mg/cm^3 .
10. A lighting unit as claimed in claim 7, comprising an initial mercury dose selected to be between an upper limit of about 0.2 mg/cm^3 of the volume enclosed by the discharge vessel and a lower limit of about 0.02 mg/cm^3 .
11. An integrated compact fluorescent lamp which comprises:
 - a cover having a base,
 - a light-transmitting outer bulb connected to the base and enclosing multiple low-pressure mercury discharge vessels, said discharge vessels being connected to one another to form a discharge path,
 - a lighting circuit contained in the cover and containing a printed circuit board extending at right angles to the longitudinal axis of the lamp, said printed circuit board comprising a lead-free solder and containing conductive tracks and a plurality of circuit elements that form an operating circuit for the lamp,
 - wherein said lamp, when subjected to TCLP standard tests in which a leachate is analyzed for mercury and lead content in the spent lamp, contains no more than 0.2 ppm mercury and no more than 5 ppm lead in the leachate.
12. An integrated compact fluorescent lamp as claimed in claim 11, wherein the discharge vessel is provided with a luminescent layer on an inner surface thereof.
13. An integrated compact fluorescent lamp as claimed in claim 11, wherein the discharge vessel encloses a discharge space that is provided with a filling of mercury and argon in a gastight manner.

14. An integrated compact fluorescent lamp as claimed in claim 12, wherein the inner surface of the discharge vessel is also provided with a mercury-protective layer and a phosphor coating disposed over the mercury-protective layer.